SEATTLE STEAMER on line

May 2000 Volume 11, Number 1

# THE MILLENIUM HAS COME AND GONE…

And we are working harder than ever, or at least it seems that way. Some of the ongoing projects involve a redesign of the computer system that serves DCLU, and that is not just the boiler section, but virtually all the other departments, and as you know by now anything having to do with computers is a time black hole.

According to plans, several interfaces are to be built into the system, but one has the potential of changing the way we do business, namely an interface that will allow insurance companies to sign off inspections on the Web. No more inspection reports going around by mail, or at least that will be an option to those who wish to take advantage of it.

Talking about the web, many of you who rely on our site for information have called me to ask the address of our site, and here it is:

**http://www.ci.seattle.wa.us/dclu/**

From there you have several options, depending on what you are looking for. The tab ***Research*** will get you in our database and the ability to look up for vessels at a site. Please note that our database is not *on-line*, and the date the system was last refreshed appears on top of the form.
***Enforcement*** will give you several options including the 1999 Seattle Boiler and Pressure Vessel Code, the Steamer, and steam and refrigeration licensing information.
***Publications*** and ***Codes*** also have some good information, including the *Energy Code*, and the *Steam Engineer and Refrigeration License Law.*

The other project that has kept us busy is the fact that early in the first quarter of 2001 DCLU is moving, this time to the Key Tower. As of now, it appears that DCLU will be occupying the 19th, 20th, 21st, and 22nd floors. Licensing will be on the 20th floor and boiler on the 21st floor. Satellites and other concepts are also being explored to alleviate the space crunch and downtown congestion.

In looking through some of the old *Steamers*, I see topics being discussed years ago that are still current. A large portion of this issue will be reserved to those topics which are still generating questions or causing problems.

One of the questions which comes up frequently, is when a particular code was adopted. The table on page 2 was designed to answer that question.

## GAS PIPING – A NEW LICENSE

On April 17th, 2000, the Mayor signed into law an ordinance requiring installations, alterations, extensions, and repairs of gas piping to be done by licensed mechanics. The ordinance will become effective one month later.

Since the ordinance contemplates a six month grace period (applicable to those who have been active in the business for at least 12 months prior to April 17, 2000 ) it is envisioned that by November 17, 2000, installers performing this type of work will need to be licensed.

Under most circumstances, property owners will be al-

*(Continued on page 3)*

| ITEM | KEY ENFORCEMENT DATES – DATE OF ADOPTION |
|---|---|
| New Controls Requirements (manual reset specifics) | November 1, 1990 – Commercial only |
| Heat Loss Calculations | December 1, 1990 – Heating Boilers and Burners January 1992 – Burners Excluded |
| National Board Registration | November 19, 1987 |
| PVC Pipe for Air Systems (1) | May 3, 1993 – By ANSI B31.1 (refer prior installations to L&I) |
| Inspect Refrigeration Systems | July 7, 1993 – Pick up refrigeration vessels on "as you go basis" - free cert (fee codes 909 or 919) |
| Chimney Liners Required | August 1, 1993 – Gas fired boilers into unlined masonry chimneys – liner required |
| 1992 NBIC | Adopted 9/1/93 by Director's Rule 14-93 |
| King County Airport – No more inspections | 11/15/93 stopped making inspections per RCW 14.08.330 (opted for inspection by state) |
| US Post Office Exempt from Inspections | 2/1/1994 USPS claimed exemption from inspections based on Federal inspection and certification program |
| Copper Piping for L.P. Steam | 5/10/96 – Per ICBO w/ref to the copper tube handbook: Gordon Clyde at ICBO who confirmed that M,K, L type copper pipe can be used for low pressure steam. Gordon referenced the "*Copper Tube Handbook*" published by the Copper Development Association, Inc. 260 Madison St, Ny, NY 10016 (212) 251-720. The applicable standards are b280 and B88 and recommended solder is 95/5 (or brazing). FYI: type K is heavy, L is medium, and M is the thinnest of the three. |
| Boilers in Battery | 5/21/96 – per SLAB interpretation: boilers in battery that are electrically isolated shall be attended per the license requirements of the most restrictive boiler in that battery |
| 1995 NBIC | Adopted by Director's Rule 31-96 |
| Plastic Piping in Air Systems | 4/8/97 Certain plastics acceptable for compressed air service. Limited to those so labeled and/or certified by the manufacturer for such use. PVC still prohibited. |
| 1997 SBPVC | Effective 8/13/97 |
| 1997 License Law Revision | Effective 8/16/97 |
| 1996 ASME Addenda | Effective 8/1/97 by Director's Rule 6-97 (includes B31.1, 1996 addenda) |
| 1997 Energy Code | Effective 8/15/98. Allows residential boilers to be sized up to 200% of heat loss |
| 1995 ASME Code & B31.1 Power Piping Code | Effective 11/2/98 by DR 6-98. Adopts 1995 Code including 1997 addenda |
| 1999 SBPVC Revision | Effective 7/1/99. Includes compliance with ASME CSD-1 for the fuel train |
| 1998 ASME Code & B31.1 Power Piping Code | Effective 1/3/2000. Adopts ASME BPVC with 1999 addenda and B31.1 Power Piping Code |

*(Continued from page 1)*
lowed to install, alter, extend, or repair gas piping at property owned by them without obtaining a license (but a permit will be required).

Other features of the ordinance are:

Affidavits signed by the applicant and by the employer documenting 12 months of full time experience are required to take the exam (6 months of full time experience are acceptable together with an approved class).

Fees of $20, for the written exam (there will be no oral), and of $45 for the license will apply.

The license will have one year validity and will expire on May 31 of each year.

An advisory board will be formed. The board will advise the Health Department on matters concerning revocation of licenses, appeals, reinstatements, written examinations, code interpretations, reciprocity with other jurisdictions, and approval of classes.

We are now in the process of preparing forms, exams, etc. and **expect to be able to start exams on July 1st, 2000.** An information sheet is available at the plumbing permit counter (710 2nd Avenue) and will be posted on the web shortly.

After November 17, 2000 installers calling for an inspector to finalize a gas piping permit will need to supply their license number.

## REQUIREMENTS FOR EXTERNAL/INTERNAL INSPECTIONS OF BOILERS IN THE CITY OF SEATTLE (a reminder)

The title of Section 230.1 of the SBPV Code reads:
**Inspection of boilers, boiler controls, and boiler safety devices shall be as follows:**
***An External Inspection:*** *All boilers shall be inspected externally annually. All required boiler controls and safety devices shall be tested during the external inspection to determine that they are operating properly.*

The wording regulating internal inspections depends a lot on the type of boiler and various other circumstances and cannot be summarized easily, but the wording regulating external inspections is fairly clear and unambiguous. Once in a while I get in an argument on the word "*annually,*" but other than that the life of the chief is good.
I have no problem if an inspector gives a certificate of operation on the basis of an internal, provided that an external inspection, as described above, is made annually. It also follows that types and dates of inspection must be communicated to this department.

## COMBUSTION AIR (an interpretation)

Appendix A of the Seattle Boiler and Pressure Vessel Code defines the rule applicable to combustion air. The size of the openings required to bring air into a boiler room are summarized in Table 7-A. This chapter is lifted from the Seattle Mechanical Code and you can find the same information there.

Item 3 of **COLUMN I. All air from outdoors**. Reads:

*"Obtain from outdoors or from space freely communicating with outdoors. Use any of the methods listed for confined space in unusually tight construction as indicated in Column II"*

There are 6 methods listed in Column II, and at first sight it may look like any of the six methods is equally acceptable. In reality method #5 requires some explanation. It reads:

*"Provide one opening or one vertical duct or one horizontal duct in the enclosure; 1 sq. in. per 3000 Btu/h input but not smaller than the vent flow area."*

This method can be used **only** for those boilers falling under the exceptions to the two opening rules of Section 702.1. These exceptions read:

*1) When all air is taken from the outdoors for an appliance with a minimum clearance of 1" on the sides and back and 6" on the front, one opening shall be permitted and located within the upper 12" of the enclosure.*
*2) When existing equipment is being replaced with other equipment of equal or smaller size and the room is not being remodeled, one opening may be provided."*

"

## INSTALLATION PERMITS (a reprint)

It is unlawful to operate a boiler or pressure vessel prior to final approval of the installation permit. Installers are allowed to operate the boiler or vessel as needed for testing or adjustment. When testing and adjustment are complete, the boiler or vessel is not to be left in operation until an inspection has been made and final approval has been given.

Installers must call for an inspection when an installation has been completed. For best results, call the inspector assigned to the area of the installation directly (see map inside back cover).

## Heat Loss Calculations

In order to comply with the Seattle Energy Code, a heat loss calculation needs to accompany your installation application form for **all boilers used for space heating, and for space heating only!** Boilers used for domestic hot water applications, and pressure vessels **do not** require heat loss calculations (even if they are used in a space heating system). A fee of $17 is added to your boiler permit if compliance with the Seattle Energy Code is required. **Again, this applies to all boilers used for space heating.**

## You do not reinsure them anymore? (a reprint)

We mail Inspection Reports to the insurance companies one month in advance. This gives the insurance inspectors part of the preceding month and the "due" month to complete the inspections. Unfortunately, within this two month period, many of your accounts change hands.

If you receive an inspection report for an account you no longer insure, you **MUST** return the report . We only print one report. Returning the report is just as good as sending a notice of cancellation. We will route it to the appropriate city inspector or to the new insurance company, as applicable.

As you can see, returning the reports helps everyone out. If you do not return the report, the new inspection agency does not know an inspection is needed until the account shows up on the overdue list. Most of you are returning these reports in a timely fashion…..thank you.

## TEMPORARILY OUT/ PERMANENTLY OUT OF SERVICE (a reprint)

As you know, on each inspection report, there is a "T.O. ?" column. Each boiler or pressure vessel that is in service or connected and ready for service, this column should display the letter "N." If a vessel is "T.O." (temporarily out of service), this column should display the letter "Y."

To qualify for "T.O" status, the following must be done:

1- Disconnect power supply (physical disconnection of wiring, not just an open circuit breaker)
2– Disconnect water supply (physical disconnection of a piping union or joint, not shutting a valve)
3– Disconnect fuel supply (physical disconnection and capping of a piping/tubing union or joint, not shutting a valve)

If you are in doubt, ask yourself the question: "can this vessel be pressurized by mistake or from another source if someone makes a mistake?"

Also note that "T.O." status is intended to apply to boilers and pressure vessels which, although disconnected per above, may be returned back to service. For vessels in disrepair or other vessels which, for many possible reasons, are not very likely to be put back into service, "P.O." status (permanently out of service) may be assigned. Of course the decision is easy if the vessel is no longer there.

Boilers and pressure vessels designated as "P.O." are removed from the database, while "T.O." status vessels continue to reappear on future inspection reports.

## IS YOUR ADDRESS CORRECT? (a reprint)

Since our first issue, the *Steamer* has been made available to all interested parties free of charge. Each time we mail out a new issue, we receive between 10 and 20 copies via return mail due to expired forwarding orders.

When this happens, we have to "chase you down" to find the new address. This, of course, means time and money which is not conducive to maintaining the current free subscription.

If this issue reaches you with a yellow Post Office sticker on it, please call the number shown on the back page of each issue and give us your new address.

Sorry for the lecture, but we would like to continue to provide this free service – please do your part.

## PROGRAMMERS MUST BE LISTED (a reprint)

Programmers – the device that controls burner operation from pre-purge through post-purge and shutdown – must be listed by a national recognized testing agency. While this is not new and exciting news , word from the field is such that there is a clear need to remind everyone of this requirement.

There is more that one company out there in the business of overhauling burner programmers without factory authorization – thus voiding the listing. One must look closely to notice this in many cases. The "remanufactured" programmer appears as new except that the listing label has been removed.

Please check closely when purchasing, installing or inspecting burner programmers. The next one you see may be nothing more than an expensive decoration.

## WATER HEATERS USED FOR SPACE HEATING INSTALLATIONS

The Seattle Boiler and Pressure Vessel Code exempts combination water heaters listed for both potable water supply and space heating that are used for both potable water **and** space heating. These units must be installed under a plumbing permit.

Both the Plumbing Code and the Seattle Boiler and Pressure Vessel Code prohibit the use of potable water heaters for space heating **only** applications. Only boilers built to the ASME Code and National Board registered can be used for space heating **only** applications. Cast iron boilers do not require National Board registration. These boilers must be installed under permit and must have all the controls required by the Seattle Boiler and Pressure Vessel Code.

### SOME SIGNIFICANT CHANGES TO THE ASME BOILER AND PRESSURE VESSEL CODE

As reported on Page 2, on January 3, 2000, Seattle has adopted the 1998 edition of the ASME Code, with the 1999 addenda. There are two main changes that I would like to underline; one is a change in the stress tables. This will allow for maximum allowable stresses based on a factor of 3.5 instead of the traditional factor of safety of 4.0 This was already announced in a previous *Steamer*. I hear that further reductions in the factor of safety are being worked out for Section VIII, Division 2.

Many reasons were given for this change, and I will not get into a lengthy description. I will point out, however, that for a Section VIII, Division 1 vessel, other things being equal, this change allows for an increase in the MAWP of about 14.5%. At the same time however, Section VIII, Division 1 dropped the hydrostatic test from 1.5 to 1.3 times the MAWP, or a reduction of roughly 13%. You can draw your own conclusion from this fact.

The other change has to do with section X, Fiber Reinforced Plastic (FRP), of the ASME Code These vessels can now be used for expansion tanks (HG-708 and HLW-809) and hot water storage tanks (HLW-808) in Section IV (Rules for Construction of Heating Boilers)

There are some limitations however. Notably, these vessels do not do very well under vacuum and are designed for internal pressure only ( they must be provided with an vacuum breaker). Furthermore they are limited to 160 psi and 210 $^{o}$F. Safety valves set not above 160 psi and high temperature controls pegged at no higher than 210 $^{o}$F will be required on these installations. The name plate of FRP vessels intended for domestic hot water are marked with HLW under the Code Stamp.

## PROPOSED CHANGES TO THE STEAM ENGINEER AND BOILER FIREMAN LICENSE LAW GRADE I, II, III STEAM ENGINEERS UNDER SMC 6.230.070.

The Steam License Advisory Board is considering the changes below. Anyone with an opinion on the proposal should contact the department (see page 7 for phone, e-mail etc.).

*A. Applicants for a steam engineer's license, Grade I, II, or III shall show to the satisfaction of the Director one of the following:*

*1. That he or she has been employed at least three years in a position directly responsible for the operation of boilers. Candidates wishing to obtain a license without a "boiler only" limitation must prove that at least one year of that experience was in the operation of steam engines.*
*2. That he or she has graduated from a recognized school of technology and has been employed at least one year in a position directly responsible for the operation of boilers. Candidates wishing to obtain a license without a "boiler only" limitation must, in addition, prove at least one year of experience in the operation of steam engines.*

*Completion of a course as described in C.2 below shall be the equivalent of one year of boiler operating experience under subsections 1. and 2. above. However, each candidate will be entitled to only one such credit.*

*B. Any licensed grade I, II, or III steam engineer with at least three years in his or her category may apply for an up grade to Boiler Supervisor Grade I, II, or III.*

*C. No change*
*D No change*

The *Steamer* is generally published quarterly by the City of Seattle, Department of Design, Construction & Land Use, Boiler Pressure Systems Inspection Section. The intent of the publication is to provide information to interested persons in related fields. Readers are welcome to submit material for publication (subject to approval). Any materials submitted for publication will become the property of the Department unless prior arrangements are made. Readers are welcome to reprint any original material (the copyrights of others must be respected); we ask only that you credit the *Steamer* as the source.

## WASHINGTON STATE BOILER INSPECTORS' ASSOCIATION

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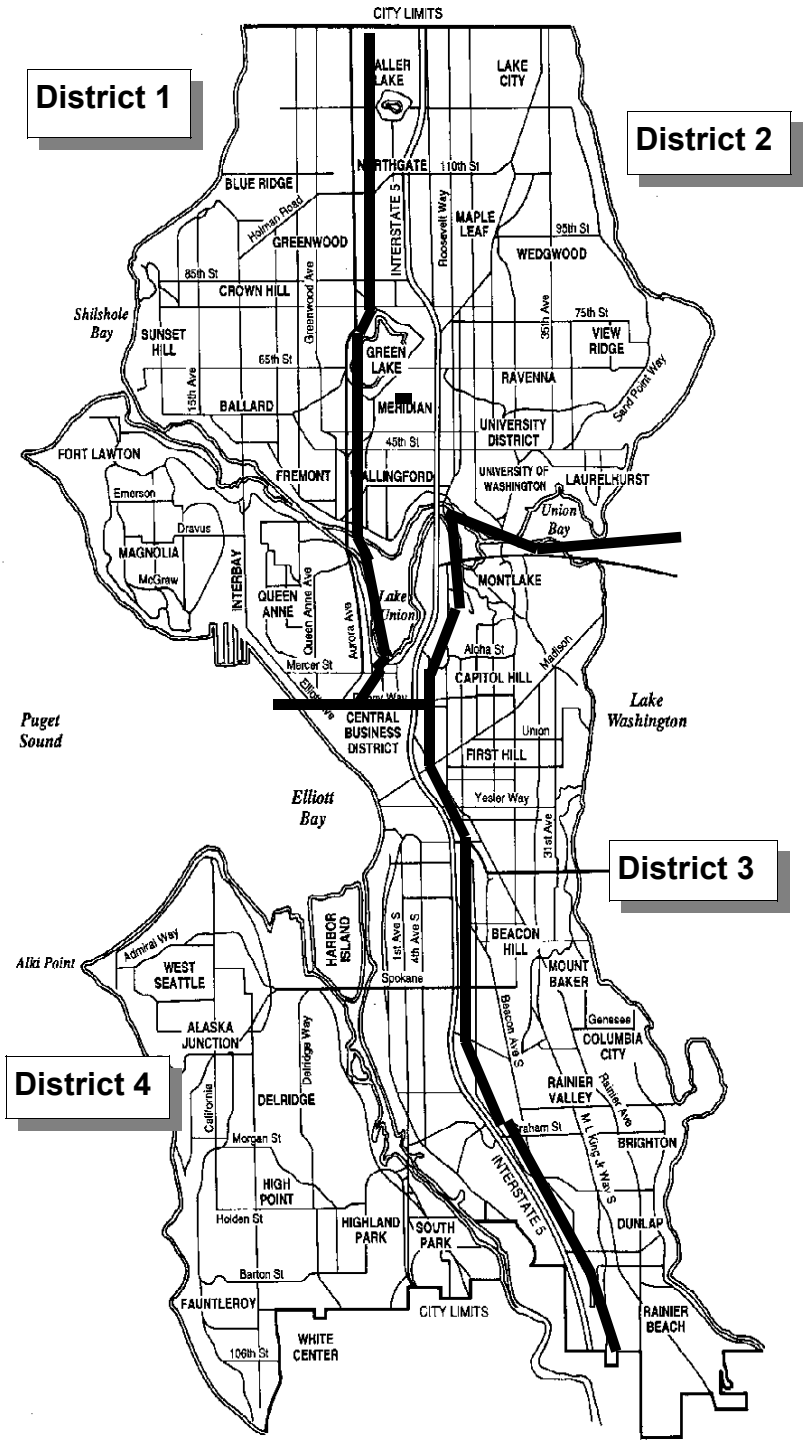
City of Seattle, DCLU

**Tim Swanson,** Vice Chair
(206) 248-8287 State of Washington L&I

Zachary Sargent, Secretary/Treasurer
(253) 752-0222 Hartford Steam Boiler

**Monthly Meetings** are held on the first *working* Monday of each month at Andy's Diner, 2963 - 4th Ave S., approximately two blocks north of Spokane Street. From I-5, take the Spokane Street exit, stay to your right, take the 4th Ave S. exit, then north a few blocks to the restaurant which will be on your left. Lunch is at noon and the meeting is called to order at 12:30 PM.

# Inspection Districts in Seattle




## INSPECTORS

| | | |
|---|---|---|
| District 1 | Chris Villa | (206) 684-8460 |
| District 2 | Vic Hall | (206) 684-5366 |
| District 3 | James McClinton | (206) 684-8462 |
| District 4 | Larry Leet | (206) 684-8461 |

## Telephone Number Reference

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Vic Hall 206-684-5366
James McClinton 206-684-8462
Larry Leet 206-684-8461
FAX 206-233-7902

**Chief Boiler Inspector/ Licensing Supv**

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Evelyn Dunlop 206-684-5174
email: evelyn.dunlop@ci.seattle.wa.us

**Seattle Public Utilities Department**

**Back Flow Prevention Questions/ Insp.**

Karen Lanning 206-684-7408
Bob Eastwood 206-233-2635
FAX 206-684-7585

**Plumbing Inspection In Seattle**

Dick Andersen, Chief 206-233-7914
Ginger Ohrmundt, Permits 206-684-5198
Inspection Requests 206-233-2621

**State of Washington Boiler Inspection**

**Olympia - Main Office**

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email: boiler@localaccess.com

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FAX 360-902-5292

**Bellingham**

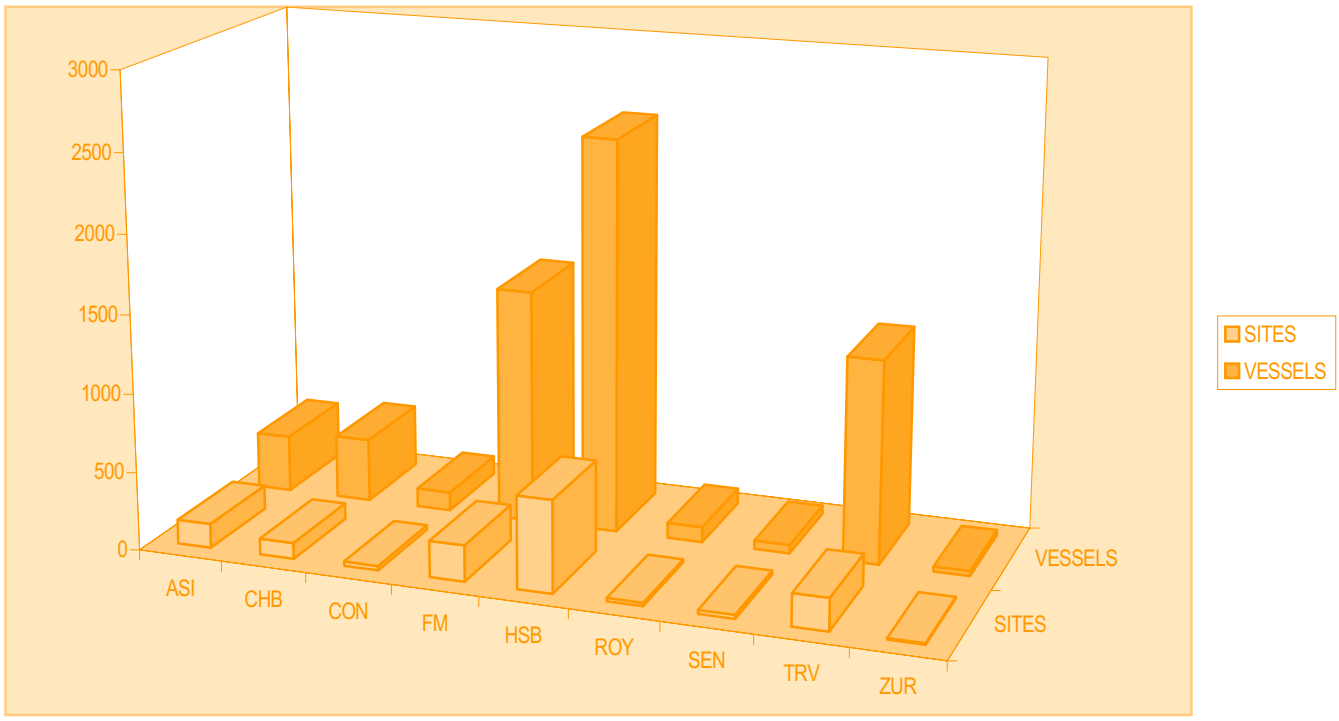
Linda Williamson 360-647-7317

**Bremerton**

Karen Boyd 360-415-4038

**Everett**

## SITES AND VESSELS CURRENTLY INSURED - AS OF MAY 1ST 2000

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